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# NASA Procedural Requirements

**COMPLIANCE IS MANDATORY**

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(NASA Only)

**Subject: Management of Government Quality Assurance  
Functions for NASA Contracts (w/change 1, dated 8/9/2010)**

**Responsible Office: Office of Safety and Mission Assurance**

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## Chapter 8. Government Mandatory Inspection Points (GMIPs)

### 8.1 General

GMIPs are NASA-mandated product assurance actions that must be performed at, or prior to, a specific point in the product's life by NASA or a delegated agent of NASA. Product assurance actions include product examination, process witnessing, and record review (often referred to as "verification"). Delegated agents include non-NASA Government agencies and quality assurance support contractors that are independent of the contractor under surveillance.

### 8.2 Selection and Assignment of GMIPs

8.2.1 Program/project Offices, with NASA SMA Lead and SMA office support, shall define GMIPs based on an analysis of risks related to contract noncompliance ([Requirement 43342](#)). This includes the following:

- a. Safety-critical GMIPs are defined in order to assure conformance to hardware characteristics, manufacturing process requirements, operating conditions, and functional performance criteria that, if not met, can result in loss of life. A safety-critical GMIP shall be assigned for every (i.e., 100 percent) attribute/requirement where noncompliance could credibly result in loss of life. ([Requirement 43343](#)).
- b. For circumstances where noncompliance could not credibly result in loss of life, but

could result in serious injury, loss of mission, or loss of a significant mission resource, GMIPs shall be assigned to attain heightened confidence of contract compliance ([Requirement 43344 8.2.1b\(1\)](#)). (Requirement 43344). Per NPD 8730.5, confidence levels are to be commensurate with the severity of consequences that would be incurred in the event of noncompliance.

c. Where analysis indicates an unacceptable likelihood of conformance with a key product attribute or process requirement, GMIPs shall be assigned to attain satisfactory confidence of contract compliance ([Requirement 43346 8.2.1c\(1\)](#)). Per NPD 8730.5, confidence levels are to be commensurate with the severity of consequences that would be incurred in the event of noncompliance. Factors indicting potential elevated likelihood include process maturity, complexity, and contractor past performance.

d. Program/project offices shall consider the following sources of information during the GMIP definition process ([Requirement 43348](#)):

- (1) Design, safety, drawing, engineering, configuration, and technical document reviews.
- (2) Reliability, maintainability, and system safety tests and analyses.
- (3) Development, qualification, certification, and acceptance tests.
- (4) Failure Mode and Effects Analysis/Critical Items List and Hazards Analysis.
- (5) Interface and interchangeability requirements.
- (6) Contractor fabrication procedures, process control instructions, and design standards/manuals.
- (7) Performance of root cause analyses and implementation of preventative and corrective actions.
- (8) Nonconformance reports and records of contractor/supplies/services history.
- (9) Feedback from the NASA Center or the delegated agency.
- (10) Critical item and critical characteristic lists developed by the contractor.
- (11) Contractor quality assurance manuals, requirements, and selected quality system documents.

e. Program/project offices shall consider the following conditions, operations, and quality assurance functions during the GMIP definition process ([Requirement 43360](#)):

- (1) Validation of critical process controls.
- (2) Qualification, certification, and first article tests.
- (3) Acceptance tests and/or inspection of hardware and software end items and selected nondeliverable hardware, tooling, or software. This includes test readiness.
- (4) Preshipment review (data package review, shipment readiness, and shipping/acceptance document sign-off).
- (5) Inspection and test of repaired, reworked, or modified supplies.
- (6) Teardown, buildup, test, and inspection of Government equipment returned for overhaul or refurbishment.

- (7) Failure analyses.
  - (8) Refurbishment of previously accepted supplies.
  - (9) Products/processes that have a history of frequent configuration changes or frequent fabrication, inspection, and test nonconformances.
  - (10) Configuration verification.
  - (11) Hazardous or critical industrial operations such as lifting operations, contamination inspections, shipping operations.
- f. The delegated agency or the quality assurance support contractor, as approved by the NASA SMA Lead, may create and assign GMIPs on a temporary basis based on a determination of elevated risk or adverse trends.

### 8.3 Performance of GMIPs

Personnel responsible for the administration and performance of GMIPs shall:

- a. Perform 100 percent of all assigned GMIPs in strict accordance with the prescribed technical criteria ([Requirement 43374](#)).
- b. Request formal disposition/authorization for GMIP omissions, waivers, or deviations from the designated NASA technical authority ([Requirement 43375 8.3.b\(1\)](#)). The designated technical authority will normally be the person or office that selected and defined the GMIP requirement and may reside in the Center SMA office, program office, or engineering office in accordance with local Center governance procedures.
- c. Indicate as acceptable only those characteristics that have been personally examined, witnessed, or verified ([Requirement 43377](#)).
- d. Perform GMIPs after contractor personnel have made their acceptance decisions, except in those cases where concurrent inspections/tests are necessary to avoid the need for destructive testing or to prevent excessive costs or potential time delays ([Requirement 43378](#)).
- e. Perform GMIPs as late as practicable in the material fabrication/installation/delivery cycle for circumstances where GMIP attributes can be altered (e.g., contamination) ([Requirement 43379](#)).
- f. Perform GMIPs at subcontractor facilities only when required in the Government's interest, as specified in FAR Section 46.405 ([Requirement 43380](#)).
- g. Attest to the completion of GMIPs in accordance with the requirements of paragraph 2.4.5 of this NPR ([Requirement 43381](#)).
- h. Periodically sign a statement indicating that they understand that their signature, application of a stamp, or data entry is a professional, individual warranty (guarantee) that they personally examined the product, witnessed the process, or verified the record as literally stated for the GMIP acceptance criteria ([Requirement 43382](#)).
- i. Maintain positive controls which assure that all assigned GMIPs are incorporated into planning documents, where applicable, and accomplished ([Requirement 43383](#)).
- j. Report, track, and ensure proper resolution of nonconformances identified during the

conduct of GMIPs in accordance with section 2.7 of this NPR ([Requirement 43384](#)).

k. Where GMIP accomplishment is attested to by stamps/signatures on contractor developed/maintained planning records or data, ensure that such records are readily retrievable ([Requirement 43385](#)).

## 8.4 Special Requirements for Safety-Critical GMIPs

a. Safety-critical GMIPs shall be performed by Government personnel or under the direction and supervision of Government personnel ([Requirement 43387](#)).

b. When safety-critical GMIPs are assigned to non-Governmental personnel, NASA supervision shall include periodic/random spot checks of GMIP performance, and other measures as necessary, to ensure that such persons are properly trained and qualified and are carrying out these inspections in an objective and competent manner ([Requirement 43388](#)).

c. Safety-critical GMIPs shall include product examination or process witnessing versus record review whenever practicable ([Requirement 43389](#)).

d. Contracting officers shall include in contracts a statement expressly prohibiting the contractor from continuing work operations planned subsequent to the performance of designated safety-critical GMIPs until Government accomplishment of the mandatory inspection point ([Requirement 43390](#)).

e. For circumstances where destructive testing would be necessary to assure compliance with a safety-critical attribute, contractor assurance actions and associated GMIPs shall involve, wherever possible, the testing of a product sample that is determined to reliably/accurately represent the final product attribute ([Requirement 43391](#)).

## 8.5 Contractor Interface for Performance of GMIPs

The onsite Government representatives (i.e., NASA, delegated agency, or support contractors) shall work with the contractor to:

a. Incorporate GMIPs as hold points on contractor work planning documents ([Requirement 43393](#)).

b. Develop a GMIP notification process that assures sufficiently advance Government notification of work operations involving GMIPs, that results in timely performance of GMIPs, and that results in minimal disruption to contractor work operations ([Requirement 43394](#)).

c. Establish specific guidelines and requirements regarding contractor continuance of work operations in the event that the Government does not arrive within a specified agreed-to time frame to perform an assigned GMIP ([Requirement 43395](#)).

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